

1 **What is claimed is:**

2 1. A stator for a D.C. brushless motor, comprising:

3 a bobbin including a winding wound therearound and a central hole;

4 a magnetically conductive tube made of a magnetically conductive material and
5 extending through the central hole of the bobbin, the magnetically conductive tube including
6 an upper side and a lower side;

7 at least one upper pole plate attached to the upper side of the magnetically conductive
8 tube and including a plurality of poles and a central tubular portion through which the
9 magnetically conductive tube extends; and

10 at least one lower pole plate attached to the lower side of the magnetically conductive
11 tube and including a plurality of poles and a central tubular portion through which the
12 magnetically conductive tube extends, the poles of said at least one upper pole plate and the
13 poles of said at least one lower pole plate being alternately disposed.

14 2. The stator for a D.C. brushless motor as claimed in claim 1, wherein each said pole of said
15 at least one upper pole plate and said at least one lower pole plate includes a longitudinal
16 extension that extends in a direction parallel to a longitudinal direction of the bobbin, thereby
17 defining a magnetic pole face.

18 3. The stator for a D.C. brushless motor as claimed in claim 1, wherein two said upper pole
19 plates are attached to the upper side of the bobbin and two said lower pole plates are attached
20 to the lower side of the bobbin, each of said upper pole plates and said lower pole plates
21 including a central tubular portion through which the magnetically conductive tube extends.

22 4. The stator for a D.C. brushless motor as claimed in claim 3, wherein the central tubular
23 portion of one of said upper pole plates extends into the central hole of the bobbin, the central
24 tubular portion of one of said lower pole plates extending into the central hole of the bobbin.

25 5. The stator for a D.C. brushless motor as claimed in claim 4, wherein each said pole of one
26 of said upper pole plates and said lower pole plates includes a longitudinal extension that

1 extends in a direction parallel to a longitudinal direction of the bobbin, thereby defining a
2 magnetic face.

3 6. The stator for a D.C. brushless motor as claimed in claim 1, wherein two said upper pole
4 plates are attached to the upper side of the bobbin and two said lower pole plates are attached
5 to the lower side of the bobbin, an upper one of the two upper pole plates including a central
6 tubular portion projecting from an upper side thereof and extending away from the bobbin, a
7 lower one of the two upper pole plates including a central tubular portion projecting from an
8 underside thereof and extending into the central hole of the bobbin, an upper one of the two
9 lower pole plates including a tubular portion projecting from an upper side thereof and
10 extending into the central hole of the bobbin, a lower one of the two lower pole plates
11 including a tubular portion projecting from an underside thereof and extending away from the
12 bobbin, the magnetically conductive tube being extending through the central tubular portions
13 of the upper pole plates and the lower pole plates.

14 7. The stator for a D.C. brushless motor as claimed in claim 6, wherein each of the poles of the
15 upper one of the upper pole plates includes a longitudinal extension extending along a
16 longitudinal direction of the magnetically conductive tube and extending away from the lower
17 pole plates, each of the poles of the lower one of the lower pole plates including a longitudinal
18 extension extending along the longitudinal direction of the magnetically conductive tube and
19 extending toward the lower pole plates.

20 8. The stator for a D.C. brushless motor as claimed in claim 6, further comprising at least one
21 further upper pole plate sandwiched between the two upper pole plates, said at least one
22 further upper pole plate including a central hole through which the magnetically conductive
23 tube extends.

24 9. The stator for a D.C. brushless motor as claimed in claim 1, wherein the magnetically
25 conductive tube includes a flange on an end thereof to prevent disengagement of said at least
26 one upper pole plate and said at least one lower pole plate.

1 10. The stator for a D.C. brushless motor as claimed in claim 2, wherein the magnetically
2 conductive tube includes a flange on an end thereof to prevent disengagement of said at least
3 one upper pole plate and said at least one lower pole plate.

4 11. The stator for a D.C. brushless motor as claimed in claim 6, wherein the magnetically
5 conductive tube includes a flange on an end thereof to prevent disengagement of said at least
6 one upper pole plate and said at least one lower pole plate.

7 12. The stator for a D.C. brushless motor as claimed in claim 7, wherein the magnetically
8 conductive tube includes a flange on an end thereof to prevent disengagement of said at least
9 one upper pole plate and said at least one lower pole plate.

10 13. The stator for a D.C. brushless motor as claimed in claim 8, wherein the magnetically
11 conductive tube includes a flange on an end thereof to prevent disengagement of said at least
12 one upper pole plate and said at least one lower pole plate.